

IN THE CLAIMS:

Please cancel Claim 35 without prejudice to or disclaimer of the subject matter presented therein.

Please amend Claims 12, 13, 23, 30, 32 through 34, 36 through 39, 41, and 42, and add new Claim 43 to read as follows. A marked-up copy of Claims 12, 13, 23, 30, 32 through 34, 36 through 39, 41, and 42, showing the changes made thereto, is attached. Note that all the claims currently pending in this application, including those not presently being amended, have been reproduced below for the Examiner's convenience.

12. (Amended) A zoom lens comprising, in order from an object side to an image side,

a first lens unit of positive refractive power,
a second lens unit of negative refractive power,
a third lens unit of positive refractive power, and
a fourth lens unit of positive refractive power, zooming from a wide-angle end to a telephoto end being effected by moving said second lens unit toward the image side, and shifting of an image plane due to zooming being compensated for by moving said fourth lens unit,

wherein said second lens unit consists of four single lenses including three negative lenses and one positive lens, and at least one of said four single lenses is an aspherical lens, and

wherein the zoom lens satisfies the following condition:

$$1.28 < |R24/R25| < 3.20$$

where R24 and R25 are radii of curvature of the fourth and fifth lens surfaces, respectively, when counted from the object side, in said second lens unit.

13. (Amended) A zoom lens according to claim 12, wherein said second lens unit consists of, in order from the object side to the image side,

a negative first lens having a concave surface of larger curvature facing the image side than that of an opposite surface thereof,

a bi-concave negative second lens,

a positive third lens having a convex surface of larger curvature facing the object side than that of an opposite surface thereof, and

a bi-concave negative fourth lens.

14. (Unamended) A zoom lens according to claim 12, wherein said aspherical lens is said third lens.

15. (Unamended) A zoom lens according to claim 12, satisfying the following condition:

$$0.25 < |f2/fA| < 0.41$$

where

$$fA = \sqrt{f_w \cdot f_t}$$

wherein f_2 is a focal length of said second lens unit, and f_w and f_t are focal lengths in the wide-angle end and the telephoto end of said zoom lens, respectively.

16. (Unamended) A zoom lens according to claim 12, satisfying the following conditions:

$$36 < v_n < 65$$

$$20 < v_p < 35$$

where v_n is a mean Abbe number of materials of negative lenses which constitute said second lens unit, and v_p is a mean Abbe number of materials of positive lenses which constitute said second lens unit.

17. (Unamended) A zoom lens according to claim 12, satisfying the following condition:

$$1.71 < N_n < 1.95$$

where N_n is a mean refractive index of materials of negative lenses which constitute said second lens unit.

18. (Unamended) A zoom lens according to claim 12, satisfying the following condition:

$$0.79 < |R_{22}/f_2| < 1.32$$

where R_{22} is a radius of curvature of the second lens surface, when counted from the object side, in said second lens unit, and f_2 is a focal length of said second lens unit.

E2
and
G1

20. (Unamended) A zoom lens according to claim 12, satisfying the following condition:

C

$$0.98 < |R26/R27| < 3.55$$

where R26 and R27 are radii of curvature of the sixth and seventh lens surfaces, respectively, when counted from the object side, in said second lens unit.

E3

23. (Twice Amended) A zoom lens comprising, in order from an object side to an image side,

a first lens unit of positive optical power,

a second lens unit of negative optical power, said second lens unit moving moving to the image side for zooming from the wide-angle end to the telephoto end,

a third lens unit of positive optical power, and

a fourth lens unit of positive optical power, said fourth lens unit moving during zooming,

wherein said third lens unit has, in order from the object side to the image side, a positive lens having an aspherical surface and a negative meniscus lens having a convex surface facing the object side, and

and
C1
and

wherein said second lens unit has three negative lenses and one positive lens.

C

24. (Unamended) A zoom lens according to Claim 23, satisfying the following condition:

$$0.24 < |f2/fA| < 0.33$$

where

$$f_A = \sqrt{f_w \cdot f_t}$$

wherein f_w and f_t are focal lengths at the wide-angle end and the telephoto end of the entire zoom lens, and f_2 is the focal length of said second lens unit.

25. (Unamended) A zoom lens according to Claim 23, satisfying the following condition:

$$0.86 < |f_3/f_A| < 1.09$$

where

$$f_A = \sqrt{f_w \cdot f_t}$$

wherein f_w and f_t are focal lengths at the wide-angle end and the telephoto end of the entire zoom lens, and f_3 is a focal length of said third lens unit.

26. (Unamended) A zoom lens according to Claim 23, wherein said fourth lens unit moves during focusing, and the following condition is satisfied:

$$0.40 < \beta_{4T} < 0.55$$

wherein β_{4T} is the magnification at the telephoto end of said fourth lens unit with an object at infinity.

28. (Unamended) A zoom lens according to Claim 23, satisfying the following conditions:

$$36 < v_n < 65$$

$$20 < v_p < 35$$

where v_n is the mean Abbe number of the materials of the negative lenses that constitute said second lens unit, and v_p is the mean Abbe number of the material of the positive lens which constitutes said second lens unit.

29. (Unamended) A zoom lens according to Claim 23, satisfying the following condition:

$$70 < N_n < 1.95$$

where N_n is the mean refractive index of the materials of the negative lenses that constitute said second lens unit.

30. (Amended) A zoom lens according to Claim 23, wherein said second lens unit comprises, in order from an object side to an image side,

a first negative lens having a concave surface of stronger optical power on the image side than on the object side,

a second negative lens both surfaces of which are concave,

a first positive lens having a convex surface of stronger optical power on the object side than on the image side, and

a third negative lens, both surfaces of which are concave.

31. (Unamended) A zoom lens according to Claim 30, satisfying the following condition:

$$0.82 < |R22/f2| < 1.07$$

where R22 is the radius of curvature of the second lens surface counted from the object side of said second lens unit and f2 is the focal length of said second lens unit.

32. (Amended) A zoom lens according to Claim 30, satisfying the following condition:

Ex cond

$$1.66 < |R24/R25| < 4.00$$

where R24 and R25 are the radii of curvature of the fourth lens surface and the fifth lens surface, respectively, counted from the object side, of said second lens unit.

33. (Amended) A zoom lens according to Claim 30, satisfying the following condition:

$$1.00 < |R26/R27| < 1.46$$

2nd
C1
cond

where R26 and R27 are the radii of curvature of the sixth lens surface and the seventh lens surface, respectively, counted from the object side, of said second lens unit.

34. (Amended) A camera comprising:

a zoom lens according to Claim 23; and

an image pickup element, said image pickup element receiving an image

formed by said zoom lens.

15
36. (Amended) A zoom lens comprising, in order from an object side to an image side,

a first lens unit of positive optical power,

a second lens unit of negative optical power, said second lens unit moving during zooming,

a third lens unit of positive optical power, and

a fourth lens unit of positive optical power, said fourth lens unit moving during zooming,

wherein said third lens unit has a positive lens, both surfaces of which are aspherical, and

wherein said second lens unit has three negative lenses and one positive lens, said zoom lens satisfying the following condition:

$$0.86 < |f_3/f_A| < 1.09$$

where

$$f_A = \sqrt{f_w \cdot f_t}$$

21
22
23
wherein f_w and f_t are focal lengths at the wide-angle end and the telephoto end of the entire zoom lens, and f_3 is a focal length of said third lens unit.

37. (Amended) A zoom lens comprising, in order from an object side to an image side,

a first lens unit of positive optical power,

a second lens unit of negative optical power, said second lens unit moving

during zooming,

a third lens unit of positive optical power, and

zooming,

a fourth lens unit of positive optical power, said fourth lens unit moving during

aspherical,

wherein said third lens unit has a positive lens, both surfaces of which are

wherein said second lens unit has three negative lenses and one positive lens,

wherein said fourth lens unit moves during focusing, and

wherein the following condition is satisfied:

$$0.40 < \beta_{4T} < 0.55$$

wherein β_{4T} is the magnification at the telephoto end of said fourth lens unit with an object at infinity.

38. (Amended) A zoom lens comprising, in order from an object side to an image side,

a first lens unit of positive optical power,

during zooming,

a second lens unit of negative optical power, said second lens unit moving

a third lens unit of positive optical power, and

zooming,

a fourth lens unit of positive optical power, said fourth lens unit moving during

wherein said third lens unit has a positive lens, both surfaces of which are aspherical,

wherein said second lens unit has three negative lenses and one positive lens, and

wherein said second lens unit comprises, in order from an object side to an image side,

(a) a first negative lens having a concave surface of stronger optical power on the image side than on the object side,

(b) a second negative lens both surfaces of which are concave,

(c) a first positive lens having a convex surface of stronger optical power on the object side than on the image side, and

(d) a third negative lens, both surface of which are concave,

said zoom lens satisfying the following condition:

$$1.66 < |R24/R25| < 4.00$$

where R24 and R25 are the radii of curvature of the fourth lens surface and the fifth lens surface, respectively, counted from the object side, of said second lens unit.

39. (Amended) A zoom lens comprising, in order from an object side to an image side,

a first lens unit of positive refractive power,

a second lens unit of negative refractive power,

a third lens unit of positive refractive power, and

a fourth lens unit of positive refractive power, zooming from a wide-angle end to a telephoto end being effected by moving said second lens unit toward the image side, and shifting of an image plane due to zooming being compensated for by moving said fourth lens unit,

wherein said second lens unit consists of four single lenses including three negative lenses and one positive lens, and

wherein for the third lens in order from the object side of said four single lenses, a surface of the object side is an aspherical surface.

40. (Unamended) A zoom lens according to claim 39, satisfying the following condition:

$$0.25 < |f_2/f_A| < 0.41$$

where

$$f_A = \sqrt{f_w \cdot f_t}$$

wherein f_2 is a focal length of said second lens unit, and f_w and f_t are focal lengths in the wide-angle end and the telephoto end of said zoom lens, respectively.

41. (Amended) A zoom lens comprising, in order from an object side to an image side,

a first lens unit of positive refractive power,

a second lens unit of negative refractive power,

a third lens unit of positive refractive power, and

sub
G1
a fourth lens unit of positive refractive power, zooming from a wide-angle end to a telephoto end being effected by moving said second lens unit toward the image side, and shifting of an image plane due to zooming being compensated for by moving said fourth lens unit,

wherein said second lens unit consists of four single lenses including three negative lenses and one positive lens, and at least one of said four single lenses is an aspherical lens,

wherein the zoom lens satisfies the following condition:

0.25 < |f2/fA| < 0.41

where

$fA = \sqrt{f_w \cdot f_t}$

wherein f2 is a focal length of said second lens unit, and fw and ft are focal lengths in the wide-angle end and the telephoto end of said zoom lens, respectively.

sub
G1
42. (Amended) A camera comprising:

a zoom lens according to Claim 12; and

an image pickup element, said image pickup element receiving an image

formed by said zoom lens.

Please add new Claim 43 as follows:

sub
G1
43. (New) A zoom lens comprising, in order from an object side to an image

side,

W
a first lens unit of positive optical power,
a second lens unit of negative optical power, said second lens unit moving
during zooming,
a third lens unit of positive optical power, and
a fourth lens unit of positive optical power, said fourth lens unit moving during
zooming,

wherein said third lens unit has, in order from the object side to the image side,
a positive lens having an aspherical surface and a negative meniscus lens having a convex
surface facing the object side, and wherein said second lens unit has three negative lenses and
one positive lens, and

wherein the following condition is satisfied:

all
C,
cont
$$0.24 < |f2/fA| < 0.33$$

where

$$fA = \sqrt{fw \cdot ft}$$

wherein fw and ft are focal lengths at the wide-angle end and the telephoto end of the entire
zoom lens, and f2 is the focal length of said second lens unit.--

REMARKS

Reconsideration and allowance of the subject application are respectfully
solicited.

Claims 12 through 18, 20, 23 through 34, and 36 through 43 are pending, with
Claims 12, 23, 36, 37, 38, 39, 41, and 43 being independent. Claims 12 through 18, 20, 36